

DROUGHT FREQUENTLY ASKED QUESTIONS

How is drought defined?

Defining when drought begins is a function of impacts to water users, and includes consideration of the supplies available to local water users as well as the stored water they may have available in surface reservoirs or groundwater basins. Different local water agencies will have different criteria for defining drought conditions in their jurisdictions. Urban water suppliers may issue drought watch or drought warning notices to their customers as a way of communicating drought conditions.

A single dry year normally does not constitute drought conditions for larger urban water suppliers. Impacts of a single dry year are typically felt most by people who rely on unmanaged water sources, such as ranchers using non-irrigated rangeland.

Where can I find information about reservoir levels or streamflow?

The Department's California Data Exchange Center (<http://cdec.water.ca.gov>) provides this information for the state's major reservoir and rivers, together with seasonal runoff forecasts. Additional information on realtime streamflows and reservoir operations can be found at:

<http://waterdata.usgs.gov/ca/nwis/current/?type=flow>
<http://www.spk-wc.usace.army.mil/default.htm>

What is a water year?

Water agencies often report hydrologic data on a water year basis. The water year extends from October 1st through September 30th. This is in contrast to the National Weather Service's reporting of precipitation data, which uses a year defined by July 1st through June 30th.

Can we predict when droughts will occur in California?

No. Weather forecasts have skill out to ten days to two weeks at most. Currently, the scientific community has found only the El Niño-Southern Oscillation (ENSO) to provide some indication of potential intraseasonal to interannual (ISI) climate trends, but the capability of these climate outlooks is very limited in comparison to that of a short-term weather forecast. For example 2010 and 2011 were both La Niña years, but one was wet and the other dry, illustrating the influence of other climate patterns (notably in this case the Arctic Oscillation) on water year conditions. ISI forecasting remains a subject for further science research.

Am I at risk?

With respect to municipal and industrial water users, historical experience has shown that the most significant effects – those related to actual public health and safety impacts – are typically experienced by small, isolated rural communities relying on marginal water supply sources, and individual rural homeowners whose wells rely on groundwater in low-yield rock formations. The at-risk geographic areas (areas relying

on fractured rock groundwater or groundwater in small coastal terrace deposits) are the North and Central Coasts, Sierra Nevada foothills, and inland Southern California foothills/mountains.

How will global climate change affect drought in California? Is the current drought being caused by climate change?

It is not realistically possible to attribute a particular extreme event (drought or flood) to climate change. Human-induced climate change acts over long-term time periods and interacts with natural climate variability. Modeling performed by multiple climate researchers suggests a trend toward increasing aridity (warmer and drier) in the U.S. Southwest, including in Southern California, exacerbating drought conditions. Climate model outlooks for the northern part of the state are more uncertain with respect to precipitation changes, but have higher agreement with respect to warming temperatures. Even with no change in precipitation, warmer temperatures can stress water supply conditions by reducing water stored as mountain snowpack and by increasing vegetation water needs.

Are water suppliers required to plan for droughts?

State law requires that urban water suppliers serving more than 3,000 connections or more than 3,000 acre-feet annually prepare an urban water management plan and submit it to the Department. The plans, which must be updated every five years, must show how the water supplier would respond to a multi-year drought and a single-year cutback of up to 50 percent in their supplies. This requirement applies to more than 400 water suppliers statewide; having an approved plan is a statutory condition for eligibility to receive certain types of state financial assistance.

Why isn't seawater desalination the answer to meeting water needs during droughts?

Typically, it would not be possible to construct a seawater desalting plant during a drought as a response to the impacts of that drought – among other things, the environmental regulatory and permitting processes would be too lengthy. Even if state permitting requirements were waived through an emergency declaration, seawater desalting is relatively costly compared to other alternatives that might be available to a local water supplier. California's only example of a seawater desalination plant constructed specifically as a drought response measure was the temporary emergency plant constructed by the City of Santa Barbara during the early 1990s. (The present capacity of California municipal seawater desalting plants represents less than one-tenth of one percent of California's urban water use.)

Does weather modification help during droughts?

Weather modification ("cloud seeding") requires cloud masses suitable for seeding. Its use during droughts is limited by the number of available storms, which are typically being blocked from reaching California by atmospheric high pressure zones. For more information about weather modification, see:

http://www.nap.edu/catalog.php?record_id=10829#toc.

What were common response actions in past droughts?

Many urban water agencies increased their water conservation education and outreach programs and called for voluntary or mandatory rationing programs. Increased groundwater pumping was another typical response. Short-term water transfers were a common tool for both urban and agricultural water agencies. Most of California's major urban centers and agricultural production areas – with the exception of the Salinas Valley – are within reach of a regional conveyance facility or natural waterway that provides access to water transfers.